(When Filled In)

REPORT OF TRAINING AT GOVERNMENT EXPENSE

DATE: 10 May 1957

TO : Director of Training

THRU: Training Liaison Officer

FROM: 25X1A9a [redacted], OIR, DD/I/AR

1. INSTITUTION ATTENDED

[redacted] 25X1A5a1

2. TYPE OF REPORT

INTERIM [ ] FINAL [X]

3. DATES OF THIS TRAINING

4. DESCRIPTION OF PROGRAM *(Include list of courses and grades received)*

See attached sheet

5. OPINION OF THE PROGRAM FOR OTHER PERSONS WITH SIMILAR OBJECTIVES *(Explain strengths and weaknesses)*

The program is believed to be of great value to all analysts of the Aircraft Branch, Industrial Division, OIR. The course was well-organized, concise, and extremely profitable. Since the course was conducted at the plant, an invaluable practical approach to the problems discussed was possible through direct plant observation.

6. EXPLAIN TRAINING OBJECTIVES AND WHETHER THEY WERE MET

The main purpose of this training was to gain familiarity with the processes and problems involved in aircraft production, and to study the actual methods used by an aircraft company in programming its production of airplanes. The objectives were very well met, not only through formal class presentations, but through informal discussions and work with members of the Program Planning Unit.

7. TITLES OF MAJOR PAPERS WRITTEN *(Explain where copies are)*

N.A.

4. Description of program (Include list of courses and grades received)

Course not graded

Title - Training Course for Manufacturing Program Planning.

Program Description -

I. Experience Curves

A. Theory and Mathematical Development
B. Types of Experience Curves
C. Use of Curves

II. Major Elements of a Production Program

A. Engineering
B. Contract Tools
C. Schedule Planning
D. Material Procurement
E. Production Planning

III. Schedule Development for No. 1 Airplane

A. Prototype Airplane Requirements
B. First Production Airplane

IV. Determination of Facilities, Contract Tools, and Manpower Requirements

A. Analysis of Contract Tool Requirements
B. Facilities Requirements
C. Calculation of Manpower Requirements

V. The Use of General Forecasting Techniques

A. Estimation of Manhours per Pound
B. Calculation of Tool Fabrication Manhours
C. Estimation of Direct Area Requirements

VI. Conferences

Chief, Intelligence Information Staff, ORR 9 May 1957
THRU : Chief, Industrial Division, ORR

Acting Chief, Aircraft Branch, D/I

Cost Information on US Commercial Airliners

1. For future use in NIE and Office-wide projects, this office requires production cost information on commercial airliners. This information will be used as analogous data in determining the costs of similar Soviet equipment.

2. The production costs of commercial airliners should be broken down, if possible, into the following categories exclusive of spares and spare parts: airframe, engines, propellers, electronics, accessories, furnishings and miscellaneous. The costs of accessories, furnishings, and miscellaneous items may be combined should it not be possible to report them separately. It is suggested that the cost breakdown be presented for 4 or 5 cumulative aircraft units, such as #25, #50, #100, #200, and #500. Cumulative unit numbers which are more convenient to a particular company may be substituted.

3. Production cost breakdowns at several cumulative aircraft units are necessary because the curves for the different categories of aircraft costs generally do not have the same slope. Thus, from one cumulative unit to another the proportions of the various cost categories to the total would not remain constant. By submitting data for several cumulative aircraft units, the effect of the different slopes can be calculated. The hypothetical case which follows provides an example of the phenomenon described above and also is a convenient format for preparation and submission of the data:

SUBJECT: Cost Information on US Commercial Airliners

Cumulative Average Production Costs and Breakdown of Production Costs for a Hypothetical Airliner at Selected Cumulative Production Units

	Cumulative Units				
	25	50	100	200	500
Total Cost/(19__$'s)	683,300 (1956)	577,900 (1956-57)	489,600 (1956-57)	418,300 (1956-58)	341,900 (1956-59)
Airframe (%)	46.1	42.6	39.2	35.9	31.6
Engine (%)	25.2	26.1	27.0	28.0	28.6
Propellers (%)	4.5	5.0	5.3	5.7	6.4
Electronics (%)	9.2	9.3	9.4	9.3	9.1
Accessories (%)	8.2	9.2	10.4	11.5	13.2
Furnishings (%)	5.6	6.4	7.1	7.9	9.1
Miscellaneous (%)	1.2	1.4	1.6	1.7	2.0

4. For indexing purposes, the company should be requested to estimate the most appropriate year or years to which each total cost figure applies.

5. Should any of the companies be reluctant or refuse to provide total production costs, an almost equally satisfactory alternative would be selling price. Should any of the companies object to the alternative also, it is suggested that the matter be dropped and that only the percentage breakdown of total cost be requested. In any case the companies should be assured that all of the rules applicable to the treatment of proprietary information will be strictly adhered to by this office.

6. It should be pointed out that a previous requirement, Case 17193 (Aircraft Prices Required for Use in NIE 11-9-54) requested certain total cost information from the [redacted] 25X1A5a1 The information supplied as a result of that requirement does not answer the current need which has become more acute since the USSR began to produce native commercial aircraft designs.

7. This office appreciates that each aircraft company has its own methods of recording production data, and that these methods may not fit the format provided above. It may be that a company will be reluctant to provide the information because of the magnitude of the effort to re-work old data. In such a case the company should be assured that this office will accept the data

SUBJECT: Cost Information on US Commercial Airliners

in any form that the company is willing to provide it.

8. Following is a list of US commercial airliners, by producing company, for which the cost breakdown referred to in paragraphs (2) and (3) should be requested:

a. Convair, A Division of General Dynamics Corporation
3165 Pacific Highway
San Diego 12, California

Convair - 240
Convair - 340
Convair - 880 (if possible)

b. Douglas Aircraft Co., Inc.
3000 Ocean Park Blvd.
Santa Monica, California

DC-3
DC-4
DC-6
DC-7
DC-8 (if possible)

c. Lockheed Aircraft Corporation
2555 No. Hollywood Way
Burbank, California

Electra
Super-Constellation
Constellation
Lodestar

d. The Martin Company
Middle River, Maryland

202 (A)
404

9. The degree of need for this information is "great." Receipt of the information by 15 July 1957 would permit its utilization in projects scheduled for completion in FY 1958.

25X1A9a

25X1A9a [redacted]

ORR:D/I/AR: [redacted] 3835

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